Micropenis & Leucocyturia: a pointer to underlying urological anomaly?

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Abstract

UTI is common childhood infection yet frequently missed. The anomalies of genito-urinary tract are important predisposing factor for UTI. Certain anomalies of external genitalias points towards these internal urogenital anomalies. Present case an infant of 11 months with predominant presentation of bronchiolitis also had micropenis, which lead to focused renal screening and detection of multiple urological anomalies. Infant responded well to the treatment and is doing well on follow up.

Learning Points: Careful genital examination for external genital anomalies can help to unmask serious yet asymptomatic underlying urological malformation, if present should be followed by urine R/M +/-C/S.

Keywords: UTI, Micropenis, Urological anomaly.

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Introduction

UTI is commoner and usually recurrent in children with congenital anomalies of urinary tract, such children have greater risk of consequent renal scarring.[1,2] Primary renal damage in such children can be linked to obstructive uropathy or associated VUR or repeated UTI leading to renal scarring in a hypodysplastic kidney. Timely identification and detailed evaluation of such children will be of utmost importance. The difficulty lies in the fact that even serious anomalies can be completely asymptomatic. Certain clinical features suggesting of underlying functional or urological anomaly have been given by Indian society of pediatric nephrology but they have not included micropenis.

We are presenting an infant with bronchiolitis in whom presence of micropenis leads to renal screening and unmasking of the asymptomatic multiple urological anomalies.

Case Report

An 11 months old male infant brought with high grade fever along with poor feeding, cough, decreased urinary output for the past 4-5 days. He has received treatment for the same from another hospital. He was born as full term, AGA to primigravida mother and had non consanguineous parentage. Child was doing well except for two such similar episodes in the past for which he underwent treatment. He had normal bowel habits, normal urinary stream. No h/o abnormal frequency, dribbling or straining was present. Circumcision was delayed by parents due to micropenis.

On Examination: Child had toxic look, pallor, marked respiratory distress (tachypnea, chest wall retraction), coarse crepts bilaterally. On general physical examination following features were noted - brachecephaly, micropenis (stretched penile length = 1.5cm, normal SPL -2SD at 6- 12 months =2.3cms)[3] bifid scrotum, both testicles palpable (normal volume)rest systemic examination was normal. BP was normal for age along with normal anthropometry and development for age.

Initial Investigations done were **CBC** and **CXR PA** view. In view of micropenis **Urine R/M** and **C/S** was further advised. The CBC reports revealed polymorphonuclear leukocytosis and Urine R/M examination showed 20-25 pus cells per high power field but urine C/S was sterile. Chest X Ray revealed bilateral hyperinflation and increased broncho vascular marking (suggestive of bronchiolitis). In view of urine R/M findings renal function tests were done which were normal.

He improved after 7 days course of I.V antibiotics and was discharged on antibiotic prophylaxis. In follow up further renal imaging was advised.

USG KUB revealed B/L double ureters. No hydronephrosis and normal bladder wall was seen.

On **IVP**: Both kidneys normal

Right sided pelvicalyceal system duplicated (duplex kidney)

Right sided and left sided Duplicated Ureters (partial) which were joining at L2-L3 level on right as well as left side.

No hydronephrosis was seen.

MCUG: UB distended but normal morphology, position, capacity and outline, no f/o VUR were seen on either side, there was well defined, smooth, slit like filling defect in distal position of prostatic urethra with mild dilatation of proximal posterior urethra. Diagnosis

of PUV was made with no VUR and no hydronephrosis. During the entire follow up period of 9 months the patient took antibiotic prophylaxis initially for a period of 3 months, as he was undergoing renal imaging. He has been asymptomatic throughout.

He is under regular follow up for penile length and 6 monthly USG (KUB) will be done. Detailed endocrinological evaluation to determine the cause of micropenis to its level in the hypothalamic- pituitary-testicular- axis is being postponed due to the reluctance of parents.

Discussion

Urinary tract infections are common in children with highest prevalence in infancy[4], which is often missed or delayed due to minimal /non-specific symptoms leading to serious renal damage. Timely diagnosis[5] & regular follow up of such cases can be helpful in preventing renal complications in the long run.

Structural anomalies of genito urinary tract[6,7,8] are important predisposing factors for UTI & these are common in male infants[3] .

Although Indian Society of Pediatric Nephrology[3] has included few anomalies of external genitalia(tight phimosis, vulval synechiae, patulous anus) which point towards under lying urological anomalies, micropenis is not included. Focused renal evaluation of such infants for UTI can be helpful in detecting underlying urological abnormalities.

The above mentioned case presented with bronchiolitis but due to the presence of micropenis, urine r/m & urine c/s was advised. The investigations revealed leucocyturia but urine c/s was sterile (probably due to treatment with iv antibiotics from outside for 3 days prior to admission Detailed renal workup was planned & it revealed multiple urogenital anomalies namely, right sided duplex kidney, bilateral partial duplicated ureters with PUV with no VUR & no hydronephrosis & normal functioning kidneys.

So we suggest that anomalies of external genetalia i.e. micropenis can be included as a pointer to underlying urological anomalies.

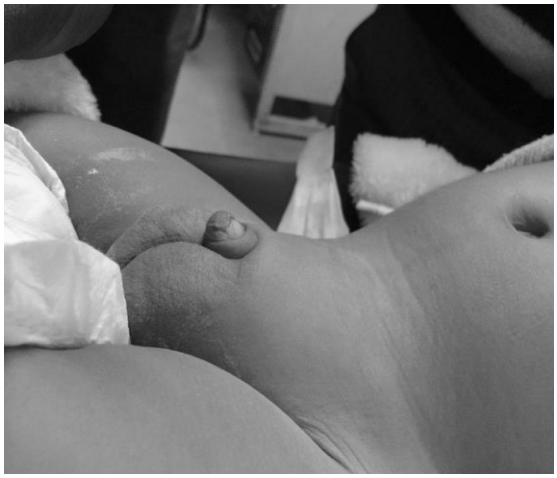

Fig. 1: Genitalia of the newborn

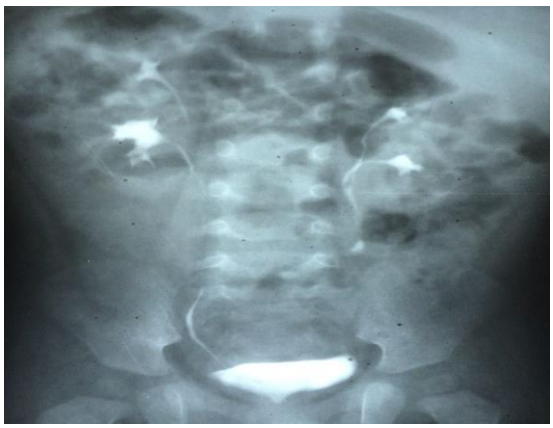

Fig. 2: IVP image of the infant

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